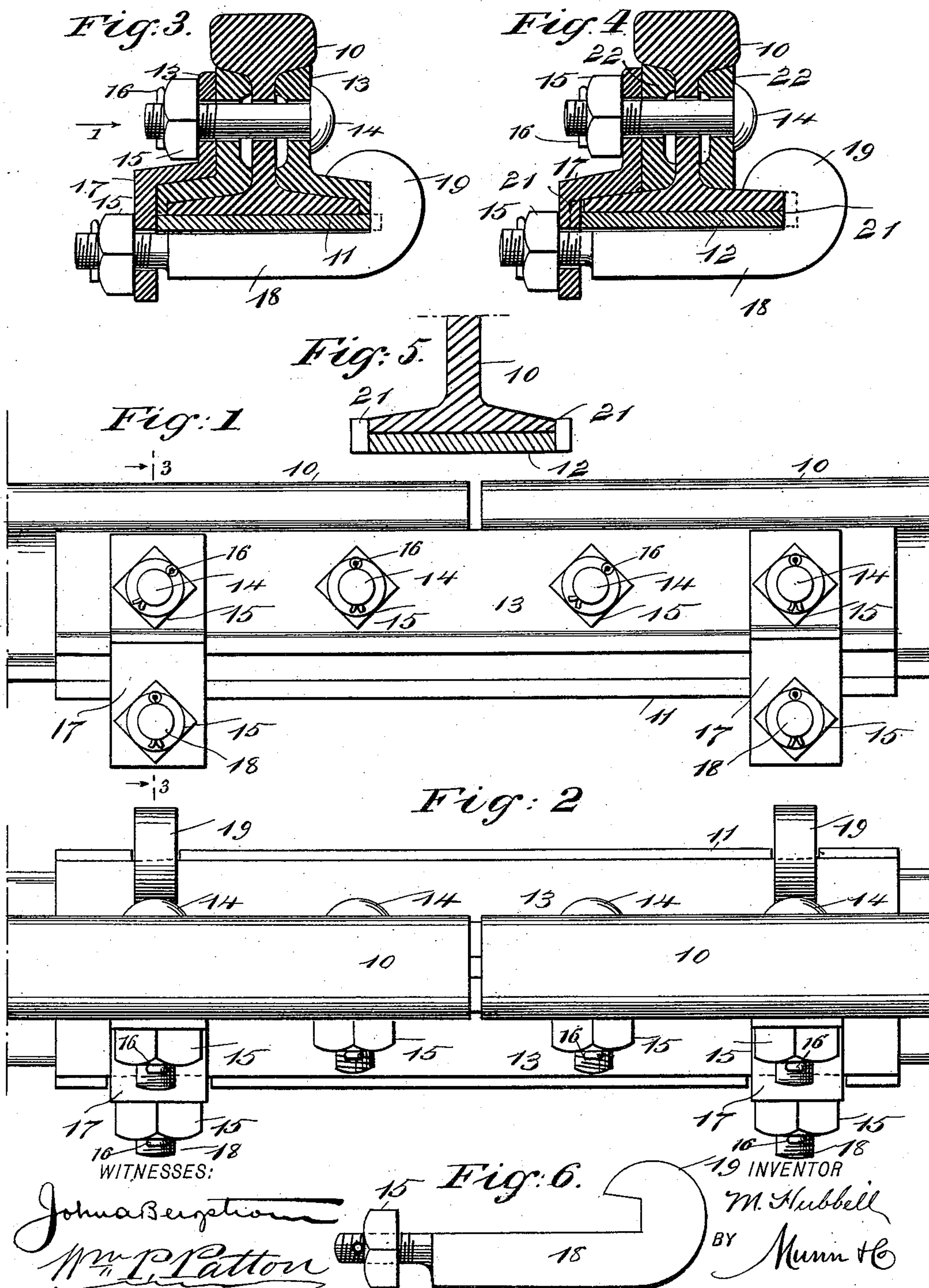


(No Model.)

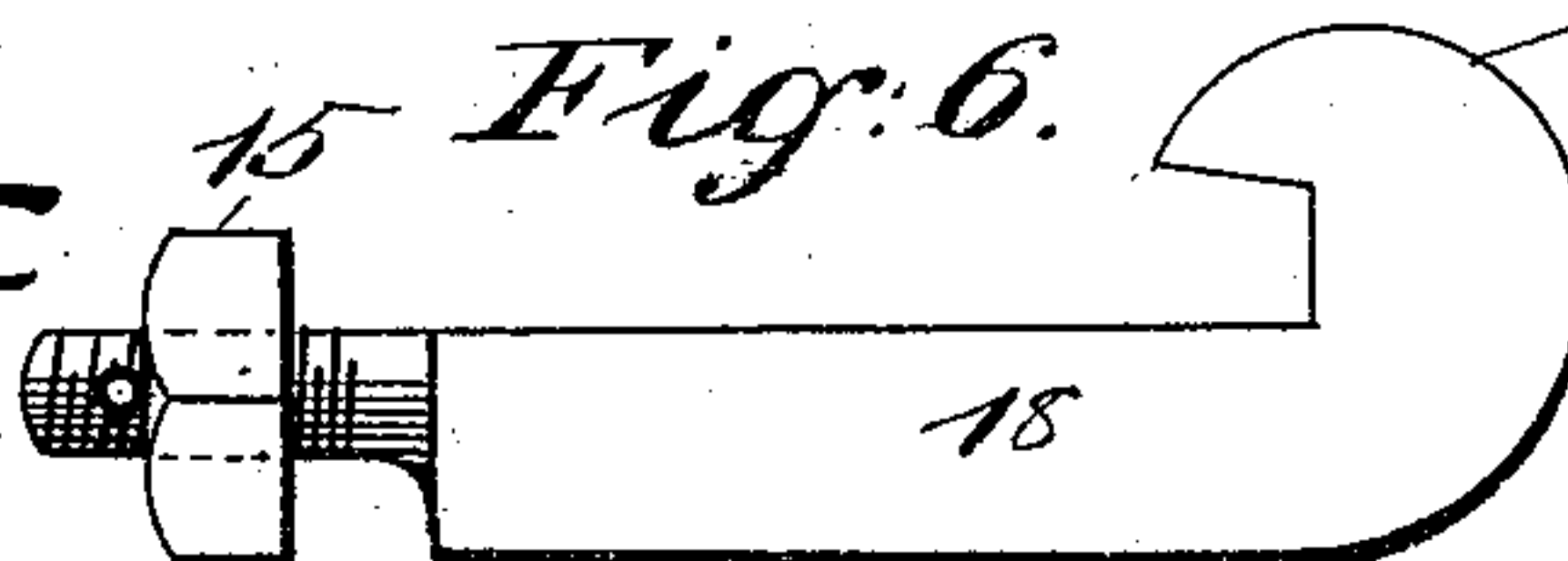
M. HUBBELL.
RAILROAD RAIL JOINT.

No. 532,963.

Patented Jan. 22, 1895.



WITNESSES:
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UNITED STATES PATENT OFFICE.

MARTIN HUBBELL, OF MOUNT KISCO, NEW YORK, ASSIGNOR OF ONE-HALF
TO ELBERT T. BAILY, OF SAME PLACE.

RAILROAD-RAIL JOINT.

SPECIFICATION forming part of Letters Patent No. 532,963, dated January 22, 1895.

Application filed April 28, 1894. Serial No. 509,376. (No model.)

To all whom it may concern:

Be it known that I, MARTIN HUBBELL, of Mount Kisco, in the county of Westchester and State of New York, have invented a new and useful Improved Railroad-Rail Joint, of which the following is a full, clear, and exact description.

My invention relates to improvements in railroad rail joints, and has for its object to provide additional improvements for the rail joint patented by me August 15, 1893, and numbered 503,239, to increase the efficiency of said patented device.

To this end, my invention consists in the construction and combination of parts, as is hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views shown.

Figure 1 is a side view of two track rail portions at adjoining ends, an angle plate that serves as a fish plate for said rails, and features of the improvement applied thereto, taken opposite the arrow 1 in Fig. 3. Fig. 2, is a plan view of two track rail portions at their jointed connection, two similar angle plates used to connect the rails, and the improved securing devices applied to clamp the angle plates on the webs and bases of the rails. Fig. 3 is a transverse sectional view of the track rail, angle plates, and the improved securing device together with a base plate employed to clamp two rails at their joint, the line of section being indicated at 3—3 in Fig. 1. Fig. 4 represents a transverse sectional view of the improvement applied to track rails and two ordinary fish plates, to form a clamped joint between adjacent ends of the rails, a modified form of the base plate being also shown. Fig. 5 is a transverse sectional view in part, of a track rail and of the base plate represented in Fig. 4, the line of section being taken at a point where opposite notches are cut in the base plate for the introduction of parts of the securing device; and Fig. 6 is a detached side view of the improved clamping bolt, which is a main feature of the invention.

In the drawings, 10 indicates the railroad track rails that are to be connected at adjacent ends by the improvement, and thus held

in alignment for service. Below the rails at their points of connection, the base plates 11 or 12, are introduced in contact with said rails, the plates being located on the cross ties (not shown) so as to afford a reliable support for the rail ends thereon.

When there are angle plates such as 13, employed to clamp and hold the ends of the track rails aligned, base plates 11, shown in Figs. 1, 2 and 3, are employed in conjunction with said parts, these plates being flat metallic slabs of a suitable length, and of such proportionate width that their side edges will slightly project outside of the similar edges of the track rails.

The angle plates 13 are used in pairs, and each consists of a metal piece that is of a sufficient length to permit the pair to embrace a proper extent of the rail bodies at and near their ends, the shape of said angle plates in cross section adapting the pair to have contact with the webs of aligned rails, and also with their base flanges on top and along side edges, as indicated in Fig. 3. The angle plates at each joint of adjacent track rails, are held in a clamped condition on the latter, by the bolts 14, which pass through opposite perforations in the plates and rail webs, and have one end of each engaged by a screw nut 15, a cross pin 16, being preferably employed for the retention of the nuts from displacement, these pins being inserted in transverse perforations in the bolts as usual.

As shown, there are four bolts 14, provided for each pair of angle plates 13, but it is optional as to the employment of this number, as two bolts will serve to reliably retain the pair of angle plates in a securely clamped condition.

At a correct distance from the near ends of two track rails that are to be connected, the side edges of the base plate 11 that supports said rails at their ends, are oppositely and rectangularly notched at two points directly below two of the clamping bolts 14, said notches being given a sufficient width to allow the depending limbs of the clamping plates 17, to be entered within them, and have a loose contact with the shoulders they form in the base plate edges and also to receive the heads of clamping hook bolts. The clamping plates 17, are of a like form in all

the views, and each comprises a metal bar that is of even thickness and parallel on the edges.

The body of each clamping piece 17 is bent into such a shape as will permit it to closely fit against the outer surface of an angle plate 13, and as clearly shown in Fig. 3 the clamping plate is perforated to receive one of the bolts 14, the nut on which is caused to press the plate 17 against the angle plate it has contact with when adjusted to effect such a result.

There is a depending portion formed on the clamping plate 17 which projects below the base plate 11, sufficiently to permit said plate to be perforated for the reception of a bolt.

An important feature of the present invention, consists in the peculiar formation of the hook bolts 18, that are provided to secure the angle plates 13 and base plate 11, oppositely on the base flanges of the track rails 10, as shown in Figs. 1, 2 and 3. Each of the said hook bolts 18, consists of a rectangular body portion, whereon an integral hook shaped head 19, is formed that is fashioned so as to have a close bearing on the top surface of one of the angle plates 13, when the bolts are used in connection with the angle plates mentioned.

The body of each bolt 18, is proportioned in length so as to project its reduced threaded portion beyond the perforated clamping plate 17 that it passes through, and as shown in Fig. 2 the heads 19 of the bolts 18, are entered in notches of the base plate 11, so as to impinge properly on the angle plates, and be retained in place by an engagement with shoulders produced by the notches.

On the projecting threaded end portions of the hook bolts 18, nuts 15 are placed, which are prevented from displacement, by cross pins 16, or keys of ordinary form.

It will be seen, that when the bolts 18 and their nuts are properly placed and adjusted, the lower portions of the angle plates 13, will be closely drawn on the base flanges of the rails 10, and the latter firmly secured on the base plate 11, the rails being otherwise secured in the usual manner on the cross ties, to retain them in place.

In some cases it may be preferred to employ base plates constructed as indicated in Figs. 4 and 5, said base plates 12, having upturned flanges 21 formed along their side edges, which flanges have a loose bearing on the edges of the base flanges of the track rails 10, which are thus prevented from side motion if the base plates 12 are properly affixed on the cross ties of the road.

The base plates 12, are preferably used in conjunction with the ordinary fish plates 22, that serve to laterally clamp the webs of adjacent track rails at their joints, when bolts 14 are employed to secure them in position as indicated in Fig. 4.

The clamping plates 17, and hook bolts 18,

are used along with the fish plates 22 and base plates 12, to produce a strong, reliable and inexpensive rail joint.

It is claimed that the rail joints produced by the particular construction of parts herein described, will prevent lateral deviation of the rails, in a superior manner, will be measurably elastic, and maintain the top surfaces of the rails in the same plane, so as to obviate percussion that results when the rail heads are not in correct alignment and are traversed by the rolling stock of the railroad.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. In a rail joint the combination with track rails, and a base plate notched on the edges and supporting said rails at a joint, of two fish plates, clamping plates adapted to impinge the side of one of the fish plates and loosely pass through the notches of the base plate, bolts passing through aligned holes in the rail webs fish plates and clamping plates, and binding said parts together, and hook headed bolts that bind the base plate on the rails, substantially as described.

2. In a rail joint, the combination with a pair of rails, elongated plates bearing on the rail webs, angularly bent clamping plates, perforated near their upper and lower ends, and bolts arranged to bind the clamping plates, elongated plates and rail webs together, of a base plate whereon the rail ends are seated, and hook headed screw bolts hooking with their heads over the rails and base plate, passing through perforations near the lower part of the clamping plates, and adapted to bind the clamping plates, rails and base plate together, substantially as described.

3. In a rail joint, the combination, with a pair of rails, angle plates, transverse bolts binding the angle plates on the rail webs and against the edges of the rail bases, and clamping plates also engaged at their upper ends by said bolts, of a base plate whereon the rail ends are seated, and hook headed bolts adapted to bind the clamping plates, angle plates, rails and base plate together, substantially as described.

4. A railroad rail joint having elongated side bearing plates at adjacent ends, transverse bolts passing through said plates and the rail webs, and angularly bent depending clamping plates bound at their upper ends on the elongated plates, the base plate having upturned flanges at its edges, engaging the side edges of the rail bases, and hook headed screw bolts arranged to bind the lower ends of the clamping plates on the elongated plates, and hold the rail bases on the flanged base plate, substantially as described.

MARTIN HUBBELL.

Witnesses:

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MARIA HYATT.